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Sherry A. Long
University of Cincinnati - Clermont

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Teachers' Perceptions of Readiness and Support of Online Instruction in Rural School Settings

Sherry A. Long[1]

[1]School of Education
University of Cincinnati - Clermont, United States
sherry.long@uc.edu

Abstract

Due to the COVID-19 pandemic, teachers were required to continue instructing students, but using an online setting. This quantitative study examined teacher perceptions of readiness and institutional support in online instruction in a rural setting. Participants included 49 teachers from the K-12 level. Participants completed the TPACK Self-Efficacy Scale, Community of Inquiry Survey, and Institutional Support for Online and Blended Learning Questionnaire. Results indicated the teachers perceive their online readiness as good or average and their online presence as adequate. Teachers also perceived institutional support to be lacking. A positive correlation was also found to exist between perceived readiness for online instruction and support.

Keywords

learning, online instruction, teachers, perceptions

Introduction

When the World Health Organization (WHO) declared COVID-19 as a global pandemic on March 11, 2020, the education world was forced to close its doors to in-person learning (Cucinotta & Vanelli, 2020; Moser et al., 2021). The quick transition from in-person learning to online learning was easier for some in the education world, but others were faced with a difficult situation (Ferdig et al., 2020). Colleges and universities were more adept at transitioning to online while K-12 schools faced uncertainties given the reliance on in-person learning (Martin et al., 2019; Singh & Thurman, 2019). For many K-12 teachers, this required a shift in their pedagogical approach as well as knowledge about using technology for teaching and learning (Gurley, 2018). Without an emphasis on pedagogies and knowledge required for online teaching in pre-service education programs or schools, practicing teachers may be at a disadvantage (McAllister & Graham, 2016). According to research, mostly at the university level, the ability for teachers to implement online teaching is influenced by the teacher and institution (Ertmer & Ottenbreit-Leftwich, 2010; Howard, 2019). It is essential to understand how teachers perceive their capabilities and those of the institution they work for when online learning is being implemented. By examining these perceptions, schools and pre-service education programs can better focus on the needs of teachers when they are asked to provide online instruction to students.

Literature Review

Online Instruction

Defining online learning is not as simple as one would think. There are multiple definitions and parts including remote, distance, hybrid, and blended (Moser et al., 2021; Singh & Thurman, 2019). Online learning as defined by Allen and Seaman (2013) is having a limited amount of in-person contact while completing more than 80% of the work online. However, the U.S. Department of Education (2014) defines distant education as, "education that uses one or more technologies to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor synchronously or asynchronously" (p. 1). Regardless of the definition of online learning, both individual and institutional factors influence teacher readiness to engage in effective online instruction (Ertmer & Ottenbreit-Leftwich, 2010; Howard, 2019; Hung, 2016; Priyadarshani & Jesuiya, 2021). According to research, teacher satisfaction is essential for establishing quality online learning (Bolliger & Wasilik, 2009; Moore, 2010). Teacher satisfaction is influenced by issues related to students, teacher, and institution with student-related issues being the most predominate factor (Bolliger & Wassilik, 2009).

Individual Teacher Factor: Skills and Knowledge

Skills and knowledge the teacher possesses impact the quality of online instruction. According to Moser et al. (2021),

> Well-designed courses clarify learner expectations with regard to technological tools and skills as well as assignments. In addition, they rely on multiple tools to foster student learning, opportunities for interaction, and resources to guide learners when they experience technological difficulties. (p. 3)

Pre-service education provides opportunities for individuals to gain valuable skills and knowledge related to content and pedagogical approaches to use in the classroom. These skills and knowledge are honed while teaching students, mainly in a face-to-face setting. When the educational system was forced to move all instruction online during the COVID-19 pandemic in 2020, many teachers faced uncertainty. Planning instruction to be delivered online is different and according to Educators of Excellence (2020), about 50% of teachers in the PreK-12 system had no experience in planning for online instruction.

Relying solely on traditional methods of teaching are not adequate for online instruction (Baran & Correia, 2014; Baran et al., 2013; Howard et al., 2021; Priyadarshani & Jesuiya, 2021). Delivering instruction in an online environment requires a different approach compared to face-to-face instruction (Baran & Correia, 2014; Baran et al., 2013; Dereshiwsky, 2013; Gurley, 2018; Howard et al., 2021; Priyadarshani & Jesuiya, 2021; Sadera, O'Neil, & Gould, 2014). These differences can be challenging for teachers (Allen & Seaman, 2013; Costello et al., 2014; Howard et al., 2021; Swan et al.,2008). Ali et al. (2005) stated that teachers who perceive themselves as experts at in-person instruction often have a novice perception of their capabilities in online instruction.

Individual Teacher Factor: Presence

Time and place influence communication methods (Gurley, 2018; Rovai & Jordan, 2004); therefore, teacher presence also impacts the quality of online instruction. Social presence includes the teacher's ability to design and organize content as well as facilitate learning through varied methods including direct instruction (Garrison et al.,2000). Presence not only includes social and teaching presence, but also cognitive presence (Law et al., 2019; Wilson & Stacey, 2004). Presence influences the quality of the course or class as well as student achievement and satisfaction (Dereshiwsky, 2013; Gurley, 2018). Online teaching presence from the perspective of students is measured by the degree of teacher visibility or presence within the course (Gurley, 2018).

There are three main areas teachers demonstrate their presence within an online instructional setting. Design and organization of the online class or course entail careful selection of content, activities, assessments, and timelines (Arbaugh et al., 2008; Arinto, 2013; Garrison, Cleveland-Innes, & Fung, 2010; Howard et al., 2021). Facilitation within the class entails interaction with students through discussion forums, assignments, and feedback (Arinto, 2013; Garrison et al., 2010; Gurley, 2018; Howard et al., 2021; Swan et al., 2008; Wilson & Stacey, 2004). Direct instruction in the class entails continuous feedback and instruction (Arbaugh et al., 2008; Garrison et al., 2010; Gurley, 2018; Howard et al., 2021; Wilson & Stacey, 2004).

Institutional Factor: Support

How teachers perceive institutional support and leadership affects the quality of online instruction (Ertmer & Ottenbreit-Leftwich, 2010; Howard, 2019; Philipsen et al., 2019). Teacher motivation is closely tied to perceptions of institutional support. When teachers perceive a clear and strong commitment from the institution, they have a higher motivation and persistence level to create and facilitate online instruction (Barefoot, 2004; Ertmer & Ottenbreit-Leftwich, 2010; Howard, 2019; Joo et al., 2011; Philipsen et al., 2021). Therefore, institutions will need to change in order to support teachers when faced with a transition to online instruction (Baran & Correia, 2014).

According to Ryan, Hodson-Carlton, and Ali (2004), there are six dimensions that need to be addressed when teachers transition to online instruction. Teacher roles, course redesign/rethink, communications, partnerships, time, and technology all need to be considered. According to Joo et al. (2011), there are three types of support an institution can provide: administrative, colleagues, and institution. Administrators show support to teachers by prioritizing professional development for teachers. Colleague support comes in the form of mentors (Holton et al., 2001) while institution support is found in having a clear vision and supportive environment (Robins, 2003).

Research has found that institutional support is essential for teachers, especially for novice teachers (Almpanis, 2015; Bao, 2020; Kao et al., 2011). Support and professional development are needed to improve technological knowledge, but also pedagogical knowledge when instruction is online (Almpanis, 2015; Bao, 2020; Baran & Correia, 2014; Rienties et al., 2013). In addition, peer support should be encouraged through a mentoring program.

Institutions also need to have a clear vision as to how online instruction is to be implemented and supported (Almpanis, 2015; Bao, 2020). Although research indicates the need for strong

institutional support, the evidence is lacking (McGee et al., 2017; Palloff & Pratt, 2013). Pilipsen et al. (2019) found that training for teachers was not enough. The institution needs to create and share their vision and goals for online learning. Likewise, Howard et al. (2018) found that institutional support affects a teacher's perceived readiness and capability for online instruction. In addition to institutional support, teachers need to have specific training during pre-service training in order to create learning environments for their students that are of the highest quality (Ali et al., 2005; Baran et al., 2013).

Methodology

A quantitative approach will be used in this study. According to Creswell, (2002) "a cross-sectional study can examine current attitudes, beliefs, opinions, or practices" at one point in time (p. 356). To analyze teacher perceptions of readiness and support for online instruction, a survey with added demographic questions was used in this cross-sectional study. Both descriptive and inferential statistics were used to analyze the numerical data.

Population

Twenty-two school districts with typology code 1 or 2 in the selected southwest counties of Ohio were selected for the study. Both 1 and 2 typologies are classified as rural districts. Type 1 has high student poverty and a small student population while type 2 has average student poverty and a very small student population. The 22 districts employed 1,586 teachers and served 30,681 students according to the Ohio Department of Education. Of the total employed teachers, only full-time teachers in the selected districts were eligible to participate in the study accounting for 1,356 teachers. Six district superintendents did not grant permission to contact teachers for the voluntary survey. Upon superintendent approval, contact with the district technology coordinator was made to obtain the e-mail addresses of the 948 eligible teachers. Of the eligible teachers, 49 completed the survey for a completing rate of 5%.

Instruments

The TPACK Self-Efficacy Scale (see Appendix A) is a validated instrument that focuses on content, pedagogy, technology, and a combination (Archambault & Crippen, 2009; Kiray, 2016; Tondeur et al., 2017). The instrument contains 24 items and asks respondents to think about how they would rate themselves on the question with a 5-point Likert scale consisting of 1 (poor), 2 (fair), 3 (good), 4 (very good), and 5 (excellent). Three factors are created from the items: technological content knowledge, technological pedagogical knowledge, and technological pedagogical content knowledge.

The Community of Inquiry Survey (see Appendix B) is a validated instrument that focuses on teacher online presence (Arbaugh et al., 2008; Armellini & De Stefani, 2016; Gurley, 2018). The instrument contains 13 items and asks respondents to think about how they perceive their presence in an online teaching environment. Respondents use a 4-point Likert scale: 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree) to rate themselves. In addition to an overall score for online presence, three additional factors are given focused on design and organization, facilitation, and direct instruction.

The Institutional Support for Online and Blended Learning Questionnaire is a validated instrument that focuses on teacher perception of institutional support for online instruction (Phillipsen et al., 2021; Phillipsen et al., 2019). The instrument contains 8 items and asks respondents to use a 5-point Likert scale: 1 (completely disagree), 2 (disagree), 3 (neither disagree nor agree), 4 (agree), and 5 (completely agree) to rate their perception of support from the institution.

Procedure

A listserv was created with the e-mail addresses of the 948 eligible teachers. A blind-copy e-mail was sent to each teacher inviting them to participate in the study. The e-mail included a required university Information Sheet detailing the research study and a link to the electronic consent form and survey through Google forms. Participants with questions were responded to via e-mail. Eligible participants choosing to participate in the study were directed to a Google form which again provided the Information Sheet. Participants had to select the option "I agree to participate in this study" to access the survey and demographic questions. Participants also had an opportunity to withdraw from the study prior to submitting the survey. The survey was open for 10 days with a reminder e-mail sent out 3 days prior to closing. No further contact or interaction with the participants took place.

Analysis

Completed survey data collected via Google Forms was accessed and downloaded to an Excel file. The data was then imported into the Jamovi Statistical Software analysis tool. This software was used to run descriptive and inferential statistics to test the hypotheses and answer the research questions.

Research Questions

The research questions for this cross-sectional quantitative survey focused on teachers' perceptions of online instruction readiness and support in a rural K-12 setting. The following research questions were used in this study:

1. How do teachers in rural schools perceive their readiness for online instruction?
2. How do teachers in rural schools perceive support for online instruction?
3. Does perceived support correlate with perceived readiness for online instruction?

Hypothesis

$H1_0$ – The overall means of teachers' perceptions of online instruction readiness will be average or below.

$H1_A$ – The overall means of teachers' perceptions of online instruction readiness will be above average.

$H2_0$ – The overall means of teachers' perceptions of online instruction support will be average or above.

$H2_A$ – The overall means of teachers' perceptions of online instruction support will be below average.

$H3_0$ – There is no correlation between perceived readiness for online instruction and support.

$H3_A$ - There is a correlation between perceived readiness for online instruction and support.

Results/Findings

The purpose of this study was to examine teacher perceptions of online teaching readiness and institutional support in a rural K-12 setting. Although studies exist examining online teaching, there are few studies focused on the K-12 setting, and fewer focused on rural school settings. Therefore, there was a need for this study.

Teacher Characteristics

Of the 49 teachers completing the survey, 40.8% of teachers had taught between 1 and 15 years while 59.2% had taught 16 or more years (see Table 1). Many of the teachers held a master's degree at 77.6% while only 22.4% held a bachelor's degree. Of the 49 teachers, 40 (81.6%) were female, 8 (16.3%) male, and 1 (2%) preferred not to say. Teachers were also asked to identify the grade level span in which they worked (see Table 2). Elementary (K-5) had the highest with 34.7% followed closely by middle school (6-8) and high school (9-12). Only 5 (10.2%) of the respondents indicated a cross level teaching assignment.

Table 1

Years of Teaching

Levels	Counts	% of Total	Cumulative %
1-5	5	10.2 %	10.2 %
6-10	8	16.3 %	26.5 %
11-15	7	14.3 %	40.8 %
16-20	7	14.3 %	55.1 %
21-25	9	18.4 %	73.5 %
26-30	6	12.2 %	85.7 %
31+	7	14.3 %	100.0 %

Table 2

Frequencies of Grade Level

Levels	Counts	% of Total	Cumulative %
Any combination of Elementary, Middle, and High School	5	10.2%	10.2%
Elementary (K-5)	17	34.7%	44.9%
High (9-12)	13	26.5%	71.4%
Middle (6-8)	14	28.6%	100.0%

Teachers were also asked three questions about courses and professional development related to technology in the classroom. The first question asked about their undergraduate program while the second question focused on their graduate program. These questions were then followed up with their professional development as teachers. Of the 49 teachers, 53.1% indicated having a technology course in the undergraduate program, 26.5% at the graduate level, and 85.7% during professional development.

Test of Hypothesis

Hypothesis 1

Research hypothesis 1 stated that the overall online instruction readiness means would be above average. The TPACK Self-Efficacy Scale (Archambault & Crippen, 2009; Tondeur et al., 2017) and Community of Inquiry Survey (Gurley, 2018) were used to test hypothesis 1. The TPACK Scale focused on content knowledge, pedagogical knowledge, content/pedagogical knowledge, as well as an overall score related to using technology in online instruction. The Community Survey focused on the presence of teachers while teaching online.

The overall TPACK mean score was 3.19 on a 5-point Likert scale with a score of 3 indicating "good" (see Table 3). The lowest factor mean score of 3.07 was in technology pedagogical knowledge with the highest in technology content knowledge at 3.45 on the scale. All three factors of the TPACK Scale fall within the "good" range indicating the teachers perceive their online readiness as good or average. The median and mode scores for the factors and overall mean support the "average" overall mean. Figure 1 illustrates the dispersion of overall TPACK scores.

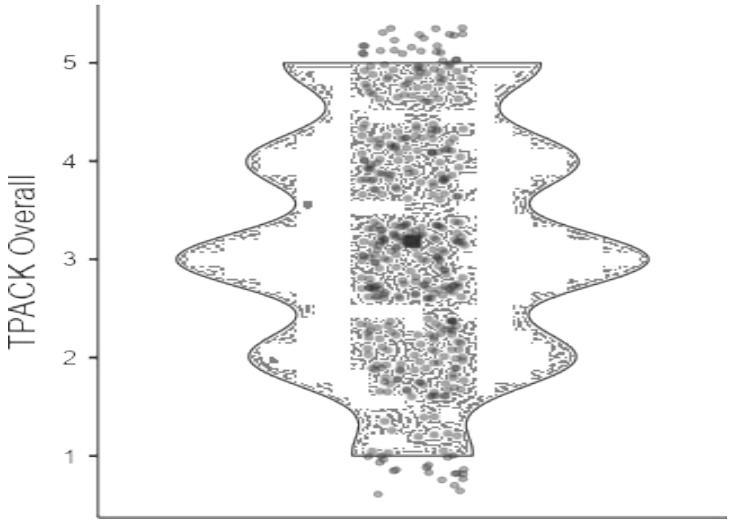
Table 3

TPACK Self-Efficacy Scale Descriptives

	TCK	TPK	TPCK	TPACK Overall
Mean	3.45	3.07	3.37	3.19
Std. error mean	0.0891	0.0853	0.0611	0.0599
Median	4	3.00	3	3.00
Mode	4.00	3.00	3.00	3.00
Standard deviation	1.08	1.19	1.13	1.19
Variance	1.17	1.43	1.28	1.41
Minimum	1	1	1	1
Maximum	5	5	5	5

Figure 1

Dispersion of TPACK Scores Overall



The overall mean score on the Community of Inquiry Survey was 3.13 on a 4-point Likert scale indicating an "agree" (see Table 4). The lowest factor mean was 2.95 in facilitation with the highest in design and organization with a 3.41 mean score. All three factors of the Community of Inquiry Survey fall in the "agree" or average range indicating the teachers perceive their online presence as being adequate. The median and modes of the factors also support the overall average mean. Figure 2 illustrates the dispersion of overall Community of Inquiry scores.

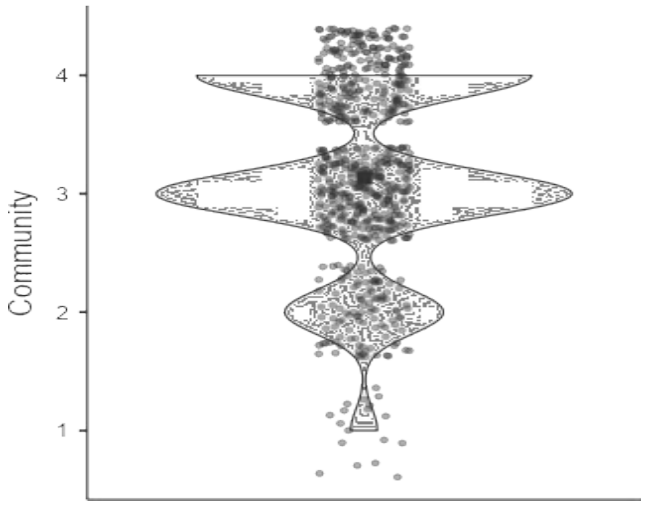
Table 4

Community of Inquiry Survey Descriptives

	Design and Org	**Facilitation**	**D Inst**	**Community Overall**
Mean	3.41	2.95	3.13	3.13
Std.error mean	0.0467	0.0482	0.0642	0.0313
Median	3.00	3.00	3	3
Mode	4.00	3.00	3.00	3.00
Standard deviation	0.654	0.827	0.779	0.790
Variance	0.427	0.683	0.606	0.624
Minimum	1	1	1	1
Maximum	4	4	4	4

Figure 2

Dispersion of Community Scores Overall



Although individual scores ranged from 1 to 5 on the TPACK Scale and 1 to 4 on the Community Survey, the overall means were average. The average results of the overall mean for both the TPACK Self-Efficacy Scale and Community of Inquiry Survey do not support hypothesis 1 that the overall mean scores would be above average. Therefore, the results fail to reject the null hypothesis 1.

Hypothesis 2

Research hypothesis 2 stated that the overall mean of online instruction support from the institution would be below average. The Institutional Support for Online and Blended Learning Questionnaire (Phillipsen, 2018) was used to test hypothesis 2. The questionnaire focused on support from the school district. The mean score on the questionnaire was 2.51 on a 5-point Likert scale. According to the scale, 2 indicates "disagree" while 3 indicates "neither disagree nor agree." Examining the median and mode scores indicates a 2 for both. Indicating an overall mean closer to "disagree" than neutral. Figure 3 also illustrates the dispersion of scores. The results indicate a below average perception of institutional support; therefore, hypothesis 2 is supported.

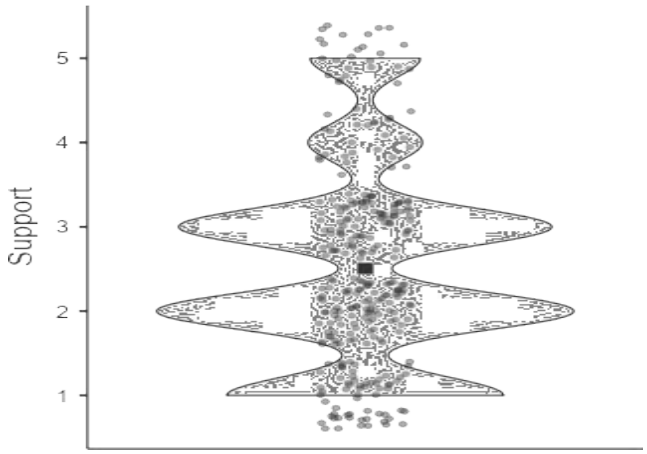
Table 5

Institutional Support for Online and Blended Learning Questionnaire Descriptives

	Support
Mean	2.51
Std. error mean	0.0683
Median	2.00
Mode	2.00
Standard deviation	1.17
Variance	1.37
Minimum	1
Maximum	5

Figure 3

Dispersion of Scores on Institutional Support for Online and Blended Learning Questionnaire



Hypothesis 3

Research hypothesis 3 stated a correlation exists between perceived readiness for online instruction and support. A regression correlation matrix was used to test hypothesis 3. According to the correlation matrix (see Table 6), there are a several correlations. The first correlation is between TPACK and Community with Pearson's r value of 0.380 which results in <.001 p-value. The second correlation is between TPACK and Support with Pearson's r value of 0.319 which results in <.001 p-value. The third correlation is between Community and Support with Pearson's r value of 0.268 which results in <.001 p-value. TPACK – Community has a slightly higher correlation compared to the others while Community – Support has the slightly lower correlation. The results indicate a positive correlation; therefore, hypothesis 3 is supported.

Table 6

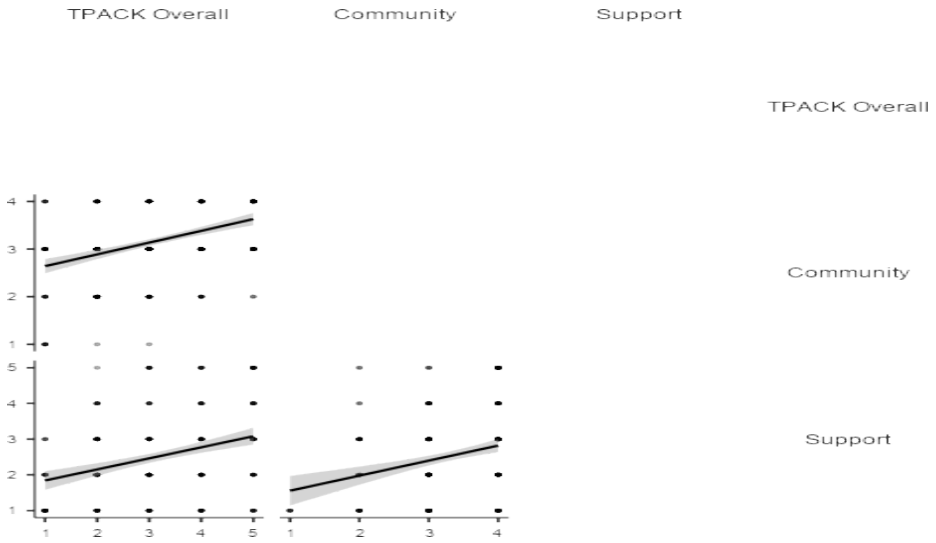
Correlation Matrix

		TPACK Overall	Community	Support
TPACK Overall	Pearson's r	—		
	p-value	—		
	95% CI	—		
	95% CI	—		
Community	Pearson's	0.380 ***	—	
	p-value	< .00	—	
	95% CI	0.462	—	
	95% CI	0.292	—	
Support	Pearson's r	0.319 ***	0.268 ***	—
	p-value	< .00	< .00	—
	95% CI	0.418	0.371	—
	95% CI	0.212	0.159	—

Note. * p < .05, ** p < .01, *** p < .001

Figure 4

Positive Correlation Plots



Discussion

Support of Null Hypothesis

Hypothesis 1 stated the overall mean scores of teachers' perceptions of online readiness and presence would be above average. The overall mean score for the TPACK Self-Efficacy Scale was 3.19 while the Community of Inquiry Survey had an overall 3.13 mean. Both means fall within the average range. Therefore, the null hypothesis 1 is supported. Research question 1 focused on the perception of teachers concerning their readiness for online instruction. After testing hypothesis 1, the data indicates that teachers perceive themselves as having average online instruction readiness. This finding is supported by the Educators of Excellence (2020) report that found only half of PreK-12 teachers had experience with online instruction. As research indicates, online instruction requires teachers to use a different approach than what is commonly used in face-to-face instruction (Baran & Correia, 2014; Baran et al., 2013; Dereshiwsky, 2013; Gurley, 2018; Howard et al., 2021; Priyadarshani & Jesuiya, 2021; Sadera et al., 2014). As Ali et al. (2005) found, perceptions of face-to-face readiness are higher when compared to online instruction readiness. Therefore, the average perceptions of online readiness instruction by teachers in this study are in line with prior research findings.

Rejection of Null Hypothesis

Research hypothesis 2 stated that teachers would perceive institutional support for online instruction as being below average. The overall mean score on the Institutional Support for Online and Blended Learning Questionnaire was 2.51 which falls between below and average. A closer examination of the mode and median scores provides a clearer picture. Both the median and mode scores were 2 indicating below average. Given this result, the data has failed to reject null hypothesis 2. Research question 2 focused on the perception of support for teachers and online instruction. After testing hypothesis 2, the data indicates teachers' perceptions of support from the school district is below average. Although research has found institutional support as being essential, there is a lack of evidence that strong leadership and support is actually happening when teachers need to teach in an online environment (McGee et al., 2017; Palloff & Pratt, 2013; Pilipsen et al., 2019). The results of this current study support the findings of previous studies focused on institutional support and teacher perceptions of that support.

Research hypothesis 3 stated that there would be a correlation between perceptions of online readiness/presence and institutional support. The Pearson's r values were 0.380, 0.319, and 0.268 with <.001 p-values. The data indicates that a correlation does exist among these 3 different measures. Given the result of the correlation matrix, the results failed to reject null hypothesis 3. Research question 3 focused on whether there was a correlation between the teachers' perceptions concerning support for online instruction and readiness/presence. After testing hypothesis 3, the results indicate that there is a positive correlation. The more perceived support, the higher the readiness and presence in online instruction. The less perceived support, the lower the readiness and presence in online instruction. Prior research has demonstrated the connections between perception of support and online instruction quality (Ertmer & Ottenbreit-Leftwich, 2010; Howard, 2019; Philipsen et al., 2019). When support is perceived by teachers, motivation and persistence

is higher resulting in a quality designed online instructional environment (Barefoot, 2004; Ertmer & Ottenbreit-Leftwich, 2010; Howard, 2019; Joo et al., 2011; Philipsen et al., 2019). Therefore, the findings of this study are supported by prior research findings of a connection between support and teacher perceptions of readiness and presence.

Implications

Although the current research study focused on rural counties located in southwest Ohio, the results may also apply to other rural school settings. Rural school settings have similar characteristics beyond location and student population (Bouck, 2018; Glover et al., 2016; Harmon et al., 2007; Howley & Howley, 2005; Jimerson, 2005; Monk, 2007). These characteristics influence opportunities for teacher support and professional development. Rural districts face professional development challenges (Bouck, 2018; Glover et al., 2016; Harmon et al., 2007; Howley & Howley, 2005; Jimerson, 2005; Monk, 2007) as well as overall financial investment challenges (Bouck, 2018; Jimerson, 2005; Monk, 2007). In a national survey study of 268 rural settings, Glover et al. (2016) examined instructional pedagogy, practice, and professional development in rural school settings. Glover et al. (2016) found that there are "important relationships among PD characteristics, teachers' knowledge, teachers' perceptions, and instructional practices" (p. 11). The findings of this study in southwest Ohio are in alignment with the findings of the national survey study. Therefore, the findings of this current study may be applicable to other rural school settings.

Teachers can no longer rely on traditional, face-to-face instructional approaches. As a result of the COVID-9 pandemic, teachers were thrust into a teaching environment that many found unfamiliar. Different approaches are needed to create an online instructional environment that is well designed and organized (Baran & Correia, 2014; Baran et al., 2013; Howard et al., 2021; Priyadarshani & Jesuiya, 2021). A high degree of social presence is required from the teacher which can take on many forms through the facilitation of discussions, assignments, interactions, and feedback (Garrison et al., 2000; Law et al., 2019; Wilson & Stacey, 2004). Educators need to not only seek out, but be provided opportunities to learn about ways to create a quality online environment for students including using various technology platforms and tools.

Administration plays a key role in teacher perceptions of readiness to teach in an online environment (Ertmer & Ottenbreit-Leftwich, 2010; Howard, 2019; Philipsen et al., 2021). Support for the teachers needs to be provided in a variety of ways. A clear vision and plan are essential for administration to have which will guide the support system for teachers (Almpanis, 2015; Bao, 2020). Support can be provided through opportunities to participate in professional development within and outside the district. Teachers should also be provided with a mentor who can support the teacher through the process of a changing role, redesigning courses, and using technology (Almpanis, 2015; Bao, 2020; Baran & Correia, 2014; Rienties et al., 2013; Ryan et al., 2004).

Pre-service teacher education programs also need to review their programs. Only 53.1% of the teachers participating in this study had a technology course in their undergraduate teaching program. A focus needs to be on preparing future teachers to create and teach in both a face-to-face setting as well as an online setting (Ali et al., 2005; Baran et al., 2013). Different approaches

to course design and implementation methods are needed as the educational system is evolving to include more technology. A specific technology course is a start, but also needs to be embedded within the program.

Study Limitations

This research study relied on teachers self-reporting their perceptions concerning online instruction readiness, presence, and institutional support. Reliability of self-reporting can come into question when reviewing collected data. In response, the responses were examined using Cronbach's alpha analysis. All three survey instruments had excellent ratings on the Cronbach's alpha analysis: TPACK Scale ($\alpha = .937$), Community of Inquiry ($\alpha = .930$), and Institutional Support ($\alpha = .945$). Therefore, reliability of responses was not an issue for this self-reporting survey study.

The number of district superintendents who denied permission to send a voluntary survey to their teachers was surprising. This lowered the number of potential teachers and begs to question the reasoning for denial. The number of teacher participants totaled 49 representing 5% of the targeted sample. Although external survey participation rates are generally much lower than internal surveys, collected data can still be examined.

Recommendations for Future Research

Based on the results of this study, there are several recommendations for future research. First, a broader sample of teachers is needed to generalize results to the population. Second, comparing samples of teacher responses from various educational settings such as rural, suburban, and urban would be advantageous to determine if there are differences in perceptions of online readiness, presence, and support. Third, surveying administration and technology coordinators at various educational settings in order to compare to the teachers within the districts in order to determine if any correlations or differences in perceptions exist.

Conclusion

Online learning is prevalent in colleges and universities. As such, numerous studies have been conducted. K-12 education relies heavily on in-person learning and likewise has been the subject of numerous studies. There have been some studies conducted with a focus on online learning at the K-12 level, but there are limited studies focused on teacher readiness and support for online teaching in the rural school setting in K-12 education.

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Appendix A

TPACK Self-Efficacy Scale

TPACK Self-Efficacy Scale

Adapted from Archambault and Crippen (2009)

5-point Likert scale: 1 (poor); 2 (fair), 3 (good), 4 (very good), and 5 (excellent)

Technological Content Knowledge

(o) My ability to use technological representations (i.e. multimedia, visual demonstrations, etc.) to demonstrate specific concepts in my content area.

(t) My ability to implement district curriculum in an online environment.

(v) My ability to use various courseware programs to deliver instruction (e.g., Blackboard, Centra, Canvas, Google Classroom).

Technological Pedagogical Knowledge

(h) My ability to create an online environment which allows students to build new knowledge and skills.

(l) My ability to implement different methods of teaching online.

(n) My ability to moderate online interactivity among students.

(p) My ability to encourage online interactivity among students.

Technological Pedagogical Content Knowledge

(e) My ability to use online student assessment to modify instruction.

(k) My ability to use technology to predict students' skill/understanding of a particular topic.

(w) My ability to use technology to create effective representations of content that depart from textbook knowledge.

(x) My ability to meet the overall demands of online teaching.

Appendix B

Community of Inquiry Survey

Adapted from Gurley (2018)

4-point Likert scale: 1 (strongly disagree), 2 (disagree), 3 (agree), and 4 (strongly agree)

Overall perceived online teaching presence: Items 1-13

Perceived online teaching presence of design and organization: Items 1-4

1. Overall, I clearly communicate important course topics.

2. Overall, I clearly communicate course goals.

3. Overall, I provide clear instructions on how to participate in course learning activities.

4. Overall, I clearly communicate important due dates/time frames for learning activities.

Perceived online teaching presence of facilitation: Items 5-10

5. Overall, I am helpful in identifying areas of agreement and disagreement on course topics that help students to learn.

6. Overall, I am helpful in guiding the class towards understanding course topics in a way that helps students clarify their thinking.

7. Overall, I help to keep course participants engaged and participating in productive dialogue.

8. Overall, I help keep the course participants on task in a way that helps students learn.

9. Overall, I encourage course participants to explore new concepts in courses.

10. Overall, my actions reinforce the development of a sense of community among course participants.

Perceived online teaching presence of direct instruction: Items 11-13

11. Overall, I help to focus discussion on relevant issues in a way that helps students to learn.

12. Overall, I provide feedback that helps students understand their strengths and weaknesses relative to the course's goals and objectives.

13. Overall, I provide feedback in a timely fashion.

Appendix C

Institutional Support for Online and Blending Learning Questionnaire

Adapted from Philipsen (2019)

5-point Likert scale: 1 (completely disagree), 2 (disagree), 3 (neither disagree nor agree), 4 (agree), and 5 (completely agree)

In our institution . . .

1. there is a clear vision towards Online Learning.

2. there is a supportive environment regarding professional development for Online Learning.

3. there are clear objectives regarding Online Learning.

4. the current information and communication technology (ICT) possibilities and infrastructure regarding Online Learning are considered.

5. attention is given to the teacher change processes inherent to changing to Online Learning.

6. there is a professional development strategy towards Online Learning.